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l1 same cyanohydrin same hydrolyz$6	2

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- US Pre-Grant Publication Full-Text Database
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USPT	l2 and hydrolyz$6	30	L3
USPT	hydroxycarboxylic acid and cyanohydrin	95	L2
USPT	hydroxycarboxylic acid	6842	L1

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=> D HIS

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     FILE 'CAPLUS' ENTERED AT 09:56:57 ON 07 DEC 2001

     FILE 'REGISTRY' ENTERED AT 09:57:10 ON 07 DEC 2001
L1             0 S ALPHA-HYDROXYCARBOXYLIC ACID/CN
                 E ALPHA-HYDROXYCARBOXYLIC ACID/CN
                 E HYDROXYCARBOXYLIC ACID/CN

     FILE 'CAPLUS' ENTERED AT 09:58:26 ON 07 DEC 2001
L2           185 S ALPHA-HYDROXYCARBOXYLIC ACID
L3           265 S CYANOHYDRIN AND HYDROLYZ?
L4             0 S L2 AND L3 AND MINERAL ACDI
L5             0 S L2 AND L3 AND MINERAL ACID
L6             0 S L2 AND L3 AND HYDROCHLORIC ACID
L7             0 S L2 AND L3 AND SULFURIC ACID
L8             0 S L2 AND L3

=> S HYDROXYCARBOXYLIC ACID AND L3
          4470 HYDROXYCARBOXYLIC
       3033873 ACID
          3027 HYDROXYCARBOXYLIC ACID
                 (HYDROXYCARBOXYLIC(W)ACID)
L9             5 HYDROXYCARBOXYLIC ACID AND L3

=> D 1-5 IBIB ABS HITSTR

L9   ANSWER 1 OF 5  CAPLUS  COPYRIGHT 2001 ACS
ACCESSION NUMBER:         2000:712967  CAPLUS
DOCUMENT NUMBER:          133:281541
TITLE:                    Preparation of .alpha.-hydroxy acid esters from
                          hydrogen cyanide and ketones
INVENTOR(S):              Tamura, Koji; Sato, Eiji; Enomoto, Kanehiko; Sakai,
                          Haruo
PATENT ASSIGNEE(S):       Mitsubishi Rayon Co., Ltd., Japan
SOURCE:                   Jpn. Kokai Tokkyo Koho, 7 pp.
                          CODEN: JKXXAF
DOCUMENT TYPE:            Patent
LANGUAGE:                 Japanese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
     JP 2000281624      A2   20001010       JP 1999-84530    19990326
OTHER SOURCE(S):          CASREACT 133:281541; MARPAT 133:281541
AB   HOCR1R2CO2Ra [R1, R2 = C1-6 linear or branched (un)satd. alkyl which may
     be substituted with halo or C1-4 alkoxy; R1 and/or R2 = group other than
     Me; R1 and R2 may be bonded together to form a ring], useful as
     intermediates for drugs, liq. crystals, resolving agents, etc., are prepd.
     by (1) treating R1R2CO with HCN in the presence of base catalysts, (2)
     hydrolyzing the resulting HOCR1R2CN in the presence of mineral
     acids, and esterifying the resulting HOCR1R2CO2H with C4-8 linear or
     branched alkanols in the presence of inorg. salts.  HCN was added dropwise
     to a mixt. of an aq. soln. of CF3COMe and Na2CO3at 10.degree. and the
     reaction mixt. was further stirred at 30.degree. for 3.0 h to give
     HOCMe(CF3)CN.  The nitrile was treated with H2SO4 at 95.degree. for 7.5 h
     to give HOCMe(CF3)CO2H, which was treated with BuOH in the presence of
     NaCl at 80.degree. for 4.0 h to give HOCMe(CF3)CO2Bu at overall yield
     93.8%.

L9   ANSWER 2 OF 5  CAPLUS  COPYRIGHT 2001 ACS
ACCESSION NUMBER:         1999:296024  CAPLUS
DOCUMENT NUMBER:          131:18759
TITLE:                    The synthesis of (R)- and (S)-.alpha.-trifluoromethyl-
                          .alpha.-hydroxycarboxylic acids via enzymatic
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resolutions
AUTHOR(S): Konigsberger, Kurt; Prasad, Kapa; Repic, Oljan
CORPORATE SOURCE: Process Research and Development, Chemical and Analytical Development, Novartis Institute for Biomedical Research, East Hanover, NJ, 07936, USA
SOURCE: Tetrahedron: Asymmetry (1999), 10(4), 679-687
CODEN: TASYE3; ISSN: 0957-4166
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Kinetic resoln. of 1,1,1-trifluoro-2-alkanone **cyanohydrin** acyl derivs. with Candida rugosa lipase afforded the remaining (R)-enantiomer in high selectivity (E from 30 to >200). Candida rugosa lipases from several suppliers were compared and found to differ remarkably in their selectivity. The (R)-enantiomer was **hydrolyzed** in one step to yield optically pure (R)-.alpha.-trifluoromethyl-.alpha.-hydroxycarboxylic acids in excellent yield. The (S)-acids were obtained in good e.e. by subtilisin-catalyzed resoln. of the corresponding racemic esters followed by chem. hydrolysis of the remaining (S)-esters.

REFERENCE COUNT: 16
REFERENCE(S):
(2) Chen, C; J Am Chem Soc 1982, V104, P7294 CAPLUS
(4) Crosby, J; WO 9738124 1997 CAPLUS
(6) Feichter, C; J Chem Soc, Perkin Trans 1 1991, P653 CAPLUS
(7) Johnson, C; Acc Chem Res 1998, V31, P333 CAPLUS
(9) Moorlag, H; J Org Chem 1990, V55, P5878 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1998:430313 CAPLUS
DOCUMENT NUMBER: 129:121724
TITLE: Manufacture of carboxylic acids with nitrile-hydrating microorganisms or their preparations
INVENTOR(S): Matsuoka, Kazuyuki; Matsuyama, Akikazu
PATENT ASSIGNEE(S): Daicel Chemical Industries, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 21 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10179183	A2	19980707	JP 1996-341673	19961220
EP 852261	A2	19980708	EP 1997-122301	19971217
EP 852261	A3	19991201		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 5932454	A	19990803	US 1997-992545	19971217
CN 1186061	A	19980701	CN 1997-109375	19971220
CN 1068630	B	20010718		

PRIORITY APPLN. INFO.: JP 1996-341673 A 19961220
OTHER SOURCE(S): MARPAT 129:121724

AB Carboxylic acids are manufd. by (1) treatment of nitriles (e.g. cyanohydrins) with nitrile-hydrating microorganisms or their prepns. to (a) produce (hydroxy)amides which are **hydrolyzed** in the presence of bases to give (hydroxy)carboxylic acid salts or (b) produce (hydroxy)carboxylic acid salts and (2) electrodialysis of the resulting carboxylic acid salts to give corresponding carboxylic acids and bases (e.g. NH3). Bipolar membranes, cation-exchange membranes, or anion-exchange membranes may be used in the electrodialysis process and NH3 generated in the carboxylic acid salt-producing and/or electrodialysis processes may be collected and recycled as a N source in prodn. of nitriles (e.g. HCN). Byproducts such as NH4HSO4 are not generated and NH3 is easily collected and recycled in the process. 2-Hydroxy-4-methylthiobutanenitrile was treated with Gordona rubropertinctus JCM 3204 to give 83% 2-hydroxy-4-methylthiobutanamide and 17% 2-hydroxy-4-methylthiobutanoic acid (I) ammonium salt. Then, extn. with MEK and

hydrolysis of the amide a[redacted]e to give I Na salt and NH3, N[redacted] recovery from the mixt., electrodialysis of the I Na salt soln. using a bipolar membrane and cation-exchange membrane, and extn. with MEK and purifn. gave I. NH3 generated and MEK used in the process were recycled.

L9 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1990:590847 CAPLUS
DOCUMENT NUMBER: 113:190847
TITLE: Enzyme-catalyzed reactions. 6. A convenient route to (R)-.alpha.-hydroxy carboxylic acids and (2R)-1-amino-2-alkanols from (R)-cyanohydrins
AUTHOR(S): Ziegler, Thomas; Hoersch, Brigitte; Effenberger, Franz
CORPORATE SOURCE: Inst. Org. Chem., Univ. Stuttgart, Stuttgart, D-7000/80, Fed. Rep. Ger.
SOURCE: Synthesis (1990), (7), 575-8
CODEN: SYNTBF; ISSN: 0039-7881
DOCUMENT TYPE: Journal
LANGUAGE: German
OTHER SOURCE(S): CASREACT 113:190847
AB (R)-Cyanohydrins, e.g., PhCH(OH)CN, prepd. in good to excellent yields with high optical purity by enzyme-catalyzed addn. of HCN to aldehydes in org. solvents, are **hydrolyzed** with concd. HCl at ambient temp., usually in very high yield, without any trace of racemization to give (R)-.alpha.-hydroxy carboxylic acids, e.g., PhCH(OH)CO2H. Likewise, no racemization is obsd. by direct redn. of the (R)-cyanohydrins with LiAlH4 to give (2R)-1-amino-2-alkanols, e.g., PhCH(OH)CH2NH2.

L9 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1953:54834 CAPLUS
DOCUMENT NUMBER: 47:54834
ORIGINAL REFERENCE NO.: 47:9302g-i,9303a-f
TITLE: Synthesis of substances having the properties of plantgrowth hormones. VI. The growth-promoting activity for plants of substances which have one or more carboxylic groups attached directly to the ring system
AUTHOR(S): Mitsui, Tetsuo; Inagaki, Kozo
CORPORATE SOURCE: Kyoto Univ.
SOURCE: J. Agr. Chem. Soc. Japan (1952), Volume Date 1951-1952, 25, 63-6
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB Twenty such acids were synthesized. 1-Anthracene-carboxylic acid, pale yellow columnlike crystals, m. 243.degree., (prepd. by **hydrolyzing** with 5% KOH-EtOH the nitrile formed by dry distn. of the K salt of anthracenesulfonic acid, obtained by reducing with Zn dust and NH3; 1-anthraquinonesulfonic acid prepd. from anthraquinone with H2SO4 and HgSO4); 2-anthracenecarboxylic acid, yellow columnlike crystals, m. 270-80.degree. (prepd. similarly from 2-anthraquinonesulfonic acid obtained from anthraquinone with H2SO4, but without HgSO4); 9-anthracenecarboxylic acid, yellow needles, m. 205-6.degree. [prepd. from anthracene and (COCl)2 heated 13 hrs. at 140-5.degree.]; 9,10-dihydro-9-anthracenecarboxylic acid, colorless columns, m. 203-5.degree.; 9,10-dihydro-9,10-anthracenedicarboxylic acid, colorless needles, m. 280.degree. [anthracene in Et2O with Na and CO2 gave an acid, the Na salt of which was extd. with H2O; addn. of acid gave a yellow ppt., which was purified to colorless crystals by recrystn. from AcOH, and dissolved in an equiv. of NaOH soln.; gradual addn. of dil. HCl produced 2 ppts., consisting of 9,10-dihydro-9-anthracenecarboxylic acid and 9,10-dihydro-9,10-anthracenedicarboxylic acid]; phthalic acid; trans-1,2-dihydrophthalic acid, colorless needles, m. 198-9.degree. [20 g. phthalic acid with 32.8 g. AcONa in 200 cc. H2O treated with 400 g. 3% Na-Hg and 60 cc. 50% AcOH gave 16.5 g. crude product, m. 194-7.degree.; fractional pptn. from NaOH soln. by adding H2SO4 gave the pure fraction, m. 198-9.degree., not the 210.degree. of the literature; boiling this compd. with H2O caused a rise in m.p., and conversion of the compd. to 4,5-dihydrophthalic acid]; cis-1,2-dihydrophthalic acid, m. 170-80.degree. (prepd. from the trans isomer with Ac2O and PbOAc); 4,5-dihydrophthalic acid, m. 214.5-15.degree. (prepd. from trans(or cis)-1,2-dihydrophthalic

acid and 1.3% N KOH); 3-n[redacted]ophthalic acid, m. 215-17.degr[redacted]; 4-nitrophthalic acid, m. 158-9.degree. (phthalic acid was nitrated with HNO3 and H2SO4 heated 2 hrs. at 100.degree. to give the nitro compds.; the Et2O-insol. fraction gave the 3-nitro acid, and the Et2O-sol. fraction the 4-nitro acid); benzoic acid; 1-hydroxycyclo-hexanecarboxylic acid, m. 106-7.degree.; cyclohexenecarboxylic acid, b. 127-9.degree., m. 38.degree. [cyclohexanone in Et2O with NaCN and HCl gave the **cyanohydrin**, which was **hydrolyzed** with concd. HCl to form the crude **hydroxycarboxylic acid**, m. 103-6.degree. (30 g. from 40 g. cyclohexanone), which was purified to the acid, m. 106-7.degree., by recrystg. from C6H6; this **hydroxycarboxylic acid** converted to the Me ester was treated with PCl5 and then **hydrolyzed** to the cyclohexenecarboxylic acid]; cyclohexanecarboxylic acid, oily substance (prepd. by hydrogenating cyclohexenecarboxylic acid with PtO2 in AcOH-Et2O; identified as the p-bromophenacyl ester, m. 90-1.degree.); .beta.-cyclogeraninic acid, m. 91.5.degree. [linalool was oxidized at room temp. with K2CrO7 and dil. H2SO4 to citral, b7 80-5.degree., which with NCCH2CO2H gave citralidenecyanoacetic acid, m. 113-15.degree.; this was boiled with 17.8% H2SO4, sepd. from the brown resinous matter, dissolved in dil. NaOH, steam-distd., the distillate acidified, Et2O-extd., and the fraction, b12 85-100.degree., collected by vacuum distn.; this was converted to the semicarbazone, m. 164.degree., which was suspended in o-C6H4(CO)2O and H2O and steam-distd. to give .beta.-cyclocitral, b10 85-95.degree.; this was oxidized with KMnO4 in ice water, and the product extd. with Et2O, yielding .beta.-cyclogeraninic acid]; cyclopentenecarboxylic acid, m. 119.5-20.5.degree. (cyclopentanone in Et2O with NaCN and HCl gave the **hydroxycarboxylic acid**, which was esterified, treated with PCl5, and then sapond.), cyclopentanecarboxylic acid, b. 214-15.degree. (prepd. by hydrogenating cyclopentenecarboxylic acid catalytically; identified as the p-bromophenacyl ester, m. 75-6.degree.); 1,2-dibromocyclopentanecarboxylic acid, m. 130-1.degree. (prepd. by brominating cyclopentenecarboxylic acic in CHCl3), and 1,2-dibromocyclohexanecarboxylic acid. All of these acids were inactive, when tested by the epinasty method.